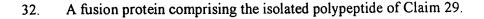
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- 33. The isolated polypeptide of Claim 29 wherein the polypeptide is the immunogenic fragment having no more than two single amino acid substitutions, deletions or additions relative to the aligned sequence.
- 34. The isolated polypeptide of Claim 29 wherein the polypeptide is the immunogenic fragment having no more than one single amino acid substitution, deletion or addition relative to the aligned sequence.
- 35. The isolated polypeptide of Claim 29 wherein the polypeptide is the immunogenic fragment which matches the aligned sequence.
- An isolated polypeptide encoded by an isolated first polynucleotide wherein the isolated first polynucleotide hybridizes under stringent conditions to a second polynucleotide which encodes the polypeptide of SEQ ID NO:2; wherein stringent conditions comprise overnight incubation at 42° C. in a solution comprising: 50% formamide, 5×SSC (150 mM NaCl, 15 mM trisodium citrate), 50 mM sodium phosphate (pH7.6), 5× Denhardt's solution, 10% dextran sulfate, and 20 micrograms/ml denatured, sheared salmon sperm DNA, followed by washing the filters in 0.1× SSC at about 65° C.; wherein the isolated polypeptide, when administered to a subject, induces an immune response that recognizes a polypeptide having the sequence of SEQ ID NO:2.
- 37. An isolated polynucleotide encoding an polypeptide of Claim 29.
- 38. An expression vector comprising the isolated polynucleotide of Claim 37.
- 39. A host cell transformed with the expression vector of Claim 38.
- 40. A process of producing an isolated polypeptide comprising (a) culturing the host cell of Claim 39 under conditions sufficient for the production of the encoded polypeptide and (b) recovering the polypeptide.

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- 41. A nucleic acid vaccine comprising the isolated polynucleotide of Claim 37 or an expression vector comprising the isolated polynucleotide, effective in a vaccinated mammal to express the polypeptide.
- 42. A live vaccine comprising the isolated polynucleotide of Claim 37 or an expression vector comprising the isolated polynucleotide comprised within a microorganism effective itself or through its host to express the polypeptide.
- An isolated polynucleotide segment comprising a polynucleotide sequence or the full complement of the entire length of the polynucleotide sequence, wherein the polynucleotide sequence is identical to SEQ ID NO:1, except that, over the entire length corresponding to SEQ ID NO:1, n_n nucleotides are substituted, inserted or deleted, wherein n_n satisfies the following expression

$$n_n \le x_n - (x_n \bullet y)$$

wherein \mathbf{x}_n is the total number of nucleotides in SEQ ID NO:1, \mathbf{y} is at least 0.90, and wherein any non-integer product of \mathbf{x}_n and \mathbf{y} is rounded down to the nearest integer before subtracting the product from \mathbf{x}_n ; and wherein the polynucleotide sequence detects a polynucleotide of SEO ID NO:1.

- 44. The isolated polynucleotide of Claim 43 where y is at least 0.95.
- 45. An expression vector comprising the isolated polynucleotide of Claim 43 which codes for a polypeptide that, when administered to a mammal, induces an immune response that recognizes a polypeptide having the sequence of SEQ ID NO:2.
- 46. A host cell transformed with the isolated polynucleotide or an expression vector comprising the isolated polynucleotide of Claim 43.

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- 47. A process of producing an isolated polypeptide comprising (a) culturing the host cell of Claim 46 under conditions sufficient for the production of the encoded polypeptide and (b) recovering the polypeptide.
- 48. A vaccine comprising the polypeptide of Claim 29.
- 49. The vaccine of Claim 48 further comprising an adjuvant.
- 50. The vaccine of Claim 49 wherein the adjuvant induces a TH1-type response.
- 51. The vaccine of Claim 50 wherein the adjuvant is a member selected from the group consisting of 3D-MPL, QS21, a mixture of QS21 and cholesterol, and a CpG oligonucleotide.
- 52. A method for inducing an immune response in a mammal comprising administration of the polypeptide of Claim 29.
- 53. A method for screening to identify compounds which stimulate or which inhibit the function of the polypeptide of Claim 29 which comprises a method selected from the group consisting of:
- (a) measuring the binding of a candidate compound to the said polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof by means of a label directly or indirectly associated with the candidate compound;
- (b) measuring the binding of a candidate compound to the said polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof in the presence of a labeled competitor;
- (c) testing whether the candidate compound results in a signal generated by activation or inhibition of the said polypeptide, using detection systems appropriate to the cells or cell membranes bearing the polypeptide;
- (d) mixing a candidate compound with a solution containing the polypeptide of Claim 29, to form a mixture, measuring activity of the polypeptide in the mixture, and comparing the activity of the mixture to a standard; or

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(e) detecting the effect of a candidate compound on the production of mRNA encoding said polypeptide and said polypeptide in cells, using for instance, an ELISA assay.

- 54. A method for the treatment of a subject by immunoprophylaxis or therapy comprising in vitro induction of immune responses to a polypeptide of Claim 29, using in vitro incubation of the polypeptide with cells from the immune system of a mammal, and reinfusing these activated immune cells to the mammal for the treatment of disease.
- 55. A method as claimed in Claim 54 wherein the treatment is for ovarian or colon cancer.
- 56. A process for diagnosing a disease or a susceptibility to a disease in a subject related to expression or activity of the polypeptide of Claim 29 in a subject comprising:
- (a) determining the presence or absence of a mutation in the nucleotide sequence encoding said polypeptide in the genome of said subject; and/or
- (b) analyzing for the presence or amount of said polypeptide expression in a sample derived from said subject.
- (c) analysing for the presence of an mRNA encoding the polypeptide of Claim 29 in a sample derived from said subject.
- 57. An isolated polypeptide comprising a member selected from the group consisting of
 - (a) an amino acid sequence which has at least 90% identity to SEQ ID NO:4;
 - (b) an immunogenic fragment of the amino acid sequence of (a) that matches an aligned contiguous segment of SEQ ID NO:4 with no more than three single amino acid substitutions, deletions or additions; and
 - (c) an immunogenic fragment of the amino acid sequence of (a), wherein the immunogenic fragment is at least 90% identical to the aligned contiguous segment of SEQ ID NO:4,

wherein the isolated polypeptide, when administered to a subject, induces an immune response that recognizes a polypeptide having the sequence of SEQ ID NO:4.

58. An isolated polynucleotide encoding the polypeptide of Claim 57.